

News & Updates



April 2002

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JASPER Begins Import Transmission Remanufacturing!

With nearly half the cars, trucks and SUV's on the road today imported from overseas, Jasper Engines & Transmissions has stepped into the realm of import transmissions.

JASPER has started remanufacturing the Toyota A140E and the A541E automatic transmissions. JASPER's current offering fits the four-cylinder and six-cylinder applications of the popular 1996 - 2000 Camry.

"We knew we had to get into the import market in order to remain competitive and expand our sales," says Craig Leuck, JASPER Transmission General Manager. "We looked at what was out on the road today and knew the Camry was one of the most popular import vehicles. So we decided to remanufacture Camry transmissions first because we knew the market was there."

JASPER has researched every aspect of the Toyota A140E and the A541E, such as the case, valve body, converter, the polishing of the parts, new and qualified parts, final assembly, testing



JASPER associate Keith Songer tests the Toyota A541E on the dynamometer.



JASPER is offering the Toyota A541E (above) and the A140E on exchange.

and shipping. And Leuck says this research will allow JASPER to add more stock numbers for this transmission, allowing for a greater number of transmissions available for sale.

In the short term, JASPER will utilize one individual builder to assemble both transmission versions. But as volume grows and sales progress, Leuck says assembly will be the responsibility of JASPER's transmission cell remanufacturing areas. "We are going to take that individual builder, who is an on-the-job training coach, and he will cross-train the cell on how to assemble this transmission family."

Leuck says additional import transmission types have not yet been targeted for remanufacturing. "We will look at other foreign transmissions in the future," says Leuck. "But before we get too far ahead of ourselves, we want to remanufacture these transmissions to the best of our abilities, then move forward."

Jeff's Auto & Truck Inc.

In the Chicago, Illinois, suburb of Riverside, there's a facility that has taken care of the customer's needs for the past 20 years.

The primary activity of Jeff's Auto & Truck Repair Inc. has been the repair and replacement of gas engines and transmissions, and differentials for foreign and domestic cars and trucks.

Much of owner Jeff M. Spingaire's previous work has been in high performance. Jeff's been rebuilding cars since 1974, specializing in 1960's and early 1970's automobiles. His work included custom welding, racing engines and transmissions and custom rear end set-ups. Jeff's love for drag racing propelled him to an IHRA championship. His daughter, Brina, continues the family racing heritage as she is involved in junior dragster competition.

In 1982, Jeff opened his shop at 20 East Quincy Street in Riverside. The building has three service bays, and recently expanded to include radiator repair.

There are two certified employees at Jeff's Auto & Truck including an ASE Certified technician. Jeff also pays for additional employee education, to make sure his technicians are up to date with the latest automotive technology.



Jeff's daughter, Brina, poses next to her father's dragster during an open house at Jeff's Auto & Truck in 2001.

And speaking of technology, Jeff's Auto & truck offers computer diagnostic equipment to track down problems with late-model cars, trucks and SUV's. They can also handle complete air conditioning repair, and emissions testing.

For the past five years, Jeff's Auto & Truck has been using remanufactured gas engines and transmissions from Jasper Engines & Transmissions. "They're the best remanufactured product I've ever used," says Jeff. "We treat all our customers fairly. And we give them the best service I can provide."

The customer philosophy of Jeff's Auto & Truck, and JASPER's unmatched reliability and service, make this pair unbeatable for many years to come.



Jeff's Auto & Truck in Riverside has serviced the Chicagoland area for the past 20 years.

Brian Campbell

is a 1991 graduate of Vincennes University with a degree in business.



Brian came to JASPER in 1992 and started in Gasoline Engine Assembly. He later advanced to New Product Development and has been Quality Control Captain for the past 1 1/2 years. He is an ASE Certified cylinder head and assembly technician.

The oiling system of an internal combustion engine is arguably the most important system on your vehicle. The parts of the system include the oil, pump, pan, filter, pump bypass, filter bypass, oil galleries, and in some applications an oil cooler.

The oil has many jobs it must perform to ensure proper operation of your engine. For example, the oil must reduce friction, help cool the engine by transferring heat, and absorb shock and clean the oil by transporting contaminants to the filter. While doing this, the oil is subjected to many extreme conditions within the engine. One example is the temperature ranges that the oil will operate under. The oil can vary from extreme cold to extreme hot. Under different operating temperatures the oil viscosity will change in relationship to the temperature of the oil. Viscosity is the measurement of resistance to flow that a substance produces. The higher the viscosity reading, the thicker the substance and the additional resistance it will produce while being forced through an orifice. The vis-

cosity of the oil has a direct effect on the oil pressure.

Supplying oil to your engine is the job of the oil pump. The pump is connected to the oil pickup screen that is located in the oil pan. This carries the oil from the oil pan sump to the inlet side of the pump. The pump will create suction on the inlet to pull the oil up into the pump. On the outlet side the oil is pushed out of the pump through the filter into the oil galleries within the cylinder block. The oil galleries feed the oil to the critical components of the engine. The force it takes to move the oil through the galleries and fill the oil clearances, which are the gaps between the wear surfaces (bearings) and the rotating assembly, is measured as oil pressure. The oil pump does not create oil pressure; it only produces flow (volume) to the components. The restriction of the oil system, and the viscosity of the oil, are what create your pressure. The larger the clearances the lower the restriction, and in turn the lower the oil pressure. Higher oil pressure is created by smaller clearances or by increasing the volume to the clearances. That is why a high-volume oil pump may increase your oil pressure.

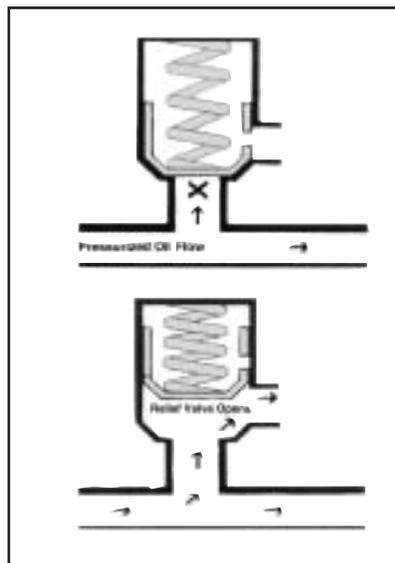


Figure 1: Pressure Relief Valve Operation

Knowing this you should start to understand how you will have higher oil pressures with cold oil compared to oil that is at operating temperatures. But the fact is, too much oil pressure can damage the engine, filter, or the pump.

Then how do you stop oil pressure spikes at cold startup? The answer to this problem lies with a pressure relief valve located in either the oil pump or in the engine block. The relief valve will consist of a piston, a spring, and a plug. Before the oil pressure reaches a damaging level, the pressure will force back the piston, compressing the spring and eventually exposing a passage for the oil to bleed off (Fig 1). One misconception is that the use of a stiffer bypass spring will increase oil pressure at idle. Changing this will not effect the idle engine oil pressure due to the valve only opening under very high pressure that is produced at high engine speeds or at cold start up. The affect of the spring will only change the maximum pressure that the pump will produce before the opening of the bypass valve. The oil being bypassed will return to the oil pan or the inlet side of the oil pump.

Another important part of your oiling system is the oil filter. The filter takes oil directly from the oil pump (the oil pump is the only part of the engine that receives unfiltered oil) and pushes it into the outside chamber of the filter. The dirty oil is pushed through the filtering media and then forced out through the center of the filter as clean oil (Fig 2).

As a filter catches contamination it will slowly begin to clog. The more dirt your filter catches the harder it is to force oil through the filtering media and into the engine.

(Continued on Page 5)

PERA Elects Brad Bawel As First Vice President



Brad Bawel is the Gas Engine Production Coordinator at Jasper Engines & Transmissions.

Brad Bawel, Gasoline Engine Production Coordinator of Jasper Engine & Transmission Exchange, has been elected first vice president of the Production Engine Remanufacturers Association for 2002.

PERA is a non-profit association in

the automotive aftermarket industry. Members are individuals and firms who remanufacture internal combustion engines and their major components and those companies who supply necessary components, supplies and equipment required in the remanufacturing process.

The goal of the association is to provide its members with the opportunity to exchange ideas, methods and procedures necessary to efficiently produce remanufactured products that are equal or superior to the original engine in quality and performance.

Jasper Engines & Transmissions has been active in PERA for many years. PERA has also named JASPER personnel as Remanufacturer of the Year an unprecedented three times.

JASPER Installers Win NASCAR Your Car Sweepstakes



Jeff and Kelly Foley of Circle Automotive Repairs in Fairfax, Virginia, were the grand prize winners of the 2001 NASCAR Your Car sweepstakes. The brothers won a fantastic race weekend at Atlanta Motor Speedway which included race tickets and air fare, behind-the-scenes pit and garage access, a ride in a pace car, and spending money from MBNA. Way to go guys!

JASPER & RBC Insurance: "Part of the Team"

During the NASCAR off-season, RBC Insurance (brand name for Liberty Life Insurance Company) joined Dave Blaney and Jasper Motorsports as an associate sponsor. RBC Insurance has developed a new term life insurance program, 1-866RBCTerm.com, which provides winning rates to race fans, even if they smoke. Headquartered in Greenville, S.C., the Liberty Life Insurance Company has provided Americans with reliable insurance protection since 1905.

Jasper's driver Dave Blaney, along with crew chief Ryan Pemberton and the rest of the Jasper crew will help spread the word about this great new product from RBC Insurance.

Jasper's participation in NASCAR's premier Winston Cup Series has provided the opportunity for RBC Insurance to develop a trackside display that allows race fans a chance to find out how little it costs to protect their families.

Visitors to the display can have their photo taken with the Jasper Engines & Transmissions #77 Ford, visit one of the many on-site computer terminals



Great Rates for Smokers!



to get a fast, free life insurance quote, pick-up product information, and receive a free butane lighter.

"We're proud to partner with Jasper Motorsports and have this chance to meet Jasper distributors, installers, and NASCAR fans through the 1-866RBCTerm.com program," said Nancy Olson, vice president of direct marketing. "Our partnership role directly supports the sport we all love."

Check out the 1-866RBCTerm.com display when attending one of the

following NASCAR Winston Cup Series events:

4/26 - 4/28	Fontana, CA
5/3 - 5/5	Richmond, VA
6/14 - 6/16	Brooklyn, MI
7/4 - 7/7	Daytona, FL

To learn more about RBC's direct-to-consumer term life insurance and receive a fast, free quote, please visit www.rbcterm.com or call toll-free 1-866-722-8376.

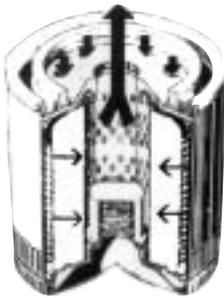


Figure 2: Unrestricted Oil Filter. Oil Being Filtered

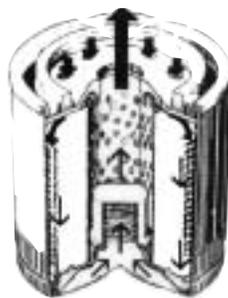


Figure 3: Restricted Oil Filter. Oil Bypassing Through Filter.

(Basic Oiling System Continued)

Eventually the oil pressure would drop and the engine would be starved for oil due to the reduced flow through the filter. This same problem will occur at startup due to the high viscosity of the cold oil. Needless to say, oil starvation will lead to engine failure. To combat this problem, another oil pressure relief valve is used. This valve may be found in the oil filter, filter base, or in the engine block. The

valve works nearly identically to the pump relief valve. When the oil pressure coming to the filter reaches 10 to 15 PSI higher than the pressure exiting the filter, the valve will begin to open and allow the oil to bypass. When the valve opens, the oil that is being bypassed will enter the flow of the oil exiting the filter (Fig 3). This means the UNFILTERED bypassed oil is going directly to your critical areas such as bearings. The bypassing of the oil also allows

minimal oil pressure fluctuation.

As you can see, the oil system in your engine has many important responsibilities to help ensure the long life of your vehicle. The bypass valves in your system are important to help ensure that the engine will not be damaged in extreme conditions. But the downside to this system has to be the filter bypass valve. By allowing unfiltered oil to the bearings, the oil will be transporting dirt that normally would have been taken out by the filter. The dirt in the bearings can eventually lead to premature failure of the engine. Regular oil changes are important to help minimize the oil bypassing your filter and introducing unfiltered oil to your engine.

I hope this article has helped you further understand the responsibilities of all the engine components and how they react inside your engine. The hope is with this information, you can better care for your engine's oil system.

Do You Want To Close More Sales? by Zach Bawel, JASPER Vice President of Sales

Zach Bawel

joined Jasper Engines & Transmissions in 1987 as a sales representative.

Bawel later became Branch Manager of the company's Baltimore location; was named General Sales Manager in 1991 and was named Vice President of Sales in 2001.



to get the vehicle into their facility are four times more likely to close the sale. That is a significant increase and well worth the extra effort on the phone to get a customer to bring the vehicle into your shop.

How do you get the customers into your facility? If it is a new prospect or customer, you must first build trust. As you know, most people are not looking forward to spending money to get their vehicle fixed, so try to create an atmosphere in which they will trust you to fix their car correctly. Ask questions like, "Why do you feel your transmission needs to be replaced?"

Then listen and respond with something like, "Well, it sounds like you may need a transmission, and with vehicles being as complex as they are today, it would probably be in your best interest to get a second

opinion to see if you really need to have the transmission replaced or if it may only be a minor problem that would not require a complete replacement." Go on to share with them the diagnostic equipment you have to properly diagnose this type of situation, then ask to schedule an appointment. Offer to send them copies of letters you have received from loyal and satisfied customers.

The point is that you must build trust over the telephone to get them into your shop. And, if you have built enough trust to get the vehicle into your shop, closing the sale just became four times easier.

Get the customer into your repair facility!

Based on our recent surveys of independent repair facilities inquiring on products, we have found **those shops that are able**



Our Improvements Will Save You Money

Many of you have toured our facilities over the past year, and have seen the improvements we have made. Through these improvements to our remanufacturing processes, JASPER is excited to pass along savings on some of our most popular units. An example of some of these are the following applications:

Engine

Ford 5.8L Flat Tappet
 Ford 5.8L Roller Tappet
 Ford 5.0L Flat Tappet
 Ford 5.0L Roller Tappet
 Ford 4.9L with A.I.R.
 Ford 4.9L without A.I.R.
 GM 5.7L '87-'95 FI
 International 7.3L Diesel (non-turbo)
Complete Engine
Running Complete



The International 7.3 liter diesel is available at a reduced price.

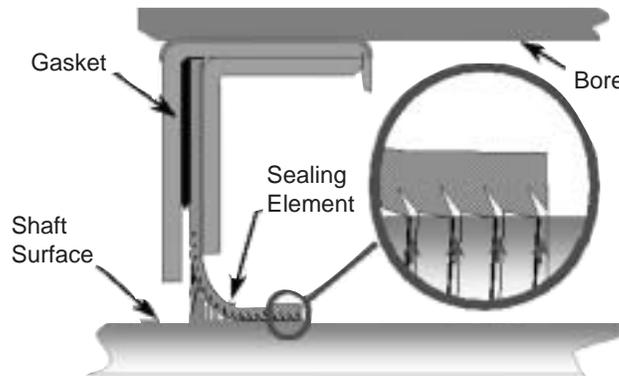
These units still include the product improvements you have come to expect from Jasper Engines & Transmissions. We value your business and will continue to provide value-oriented products.

Teflon® Rear Crankshaft Seals for the Engine Remanufacturer

In the early 1970's, PTFE (Polytetrafluoroethylene) crankshaft seals were introduced in heavy-duty diesel engines, and were in widespread use by the end of the decade. In 1993, the first PTFE crankshaft seal for an automotive application in North America was released for production. Since then, many automotive crankshaft seals have been converted from elastomeric designs to PTFE. The motivation for the movement from traditional spring-loaded elastomeric designs to PTFE seals was better sealing performance over a wider range of application conditions, and longer seal life. The specific reasons why PTFE seals perform better than traditional spring loaded elastomeric seals are many.

An elastomeric, spring loaded seal design makes a narrow contact band with the crankshaft, usually less than 0.5 mm wide, even after the seal has had a chance to break in. A PTFE "Lay-down" design (figure 1) makes a wide contact band with the crankshaft enabling it to overcome small shaft imperfections such as porosity and scratches. The PTFE main sealing lip also has a pumping feature known as a hydrothread. The hydrothread is lathe cut into the main sealing lip. When installed on the shaft the hydrothread will create a pumping action which moves lubricant back into the engine.

Fig. 1 - PTFE Lay-down Design



The Lay-down design of the PTFE enables the sealing lip to continue to function properly with levels of shaft runout, shaft to bore misalignment, and seal cocking that would typically cause excessive wear and/or leakage in an elastomeric seal.

PTFE has a unique chemical structure that makes it very inert. PTFE is not chemically degraded by mineral based lubricants, synthetic based lubricants, or chemical additive packages. Depending on the elastomer used in the seal, and the lubricant system, elastomeric seals can swell and soften or be attacked by the oil and harden. Both effects are detrimental to the ability of a seal to function.

PTFE has better resistance to the effects of temperature than elastomeric seals (figure 2). The recommended service temperature range for both elastomeric and PTFE seals is listed on the next page.

(Continued on Page 7)

Mini-Motorized Vehicle Carries JASPER Colors



Now you can drive a miniature version of the Jasper Engines & Transmissions Taurus that Dave Blaney drives in the NASCAR Winston Cup Series.

The MicroVEH MicroCupCar is from Scooter Sports of Phoenix, Arizona. The car is 36 inches long, 24 inches wide and weighs less than 50 pounds. It's like a big radio control scale model, only you can drive it. But it's small enough to fit in the trunk of your car!

The MicroVEH is constructed with a stressed, chrome alloy steel tube chassis, full helm joint steering with polished, triple chrome plated tiller, billet aluminum live rear axle, four-inch cast aluminum wheels with slick tires, fully adjustable extruded aluminum seat post with spring suspension padded seat and a fiberglass body.

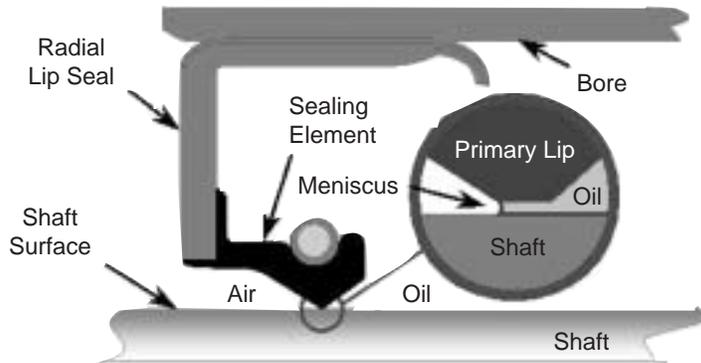
The standard 32.6cc two-stroke engine propels the MicroVEH to a top speed of 12 miles per hour, and can run approximately two hours on 1.5 liters of gas/oil mix. Maximum load is 380 pounds.

Regular prices start at \$2,195.00. And several appearance and performance parts are available to customize your MicroCupCar.

Additional information on the MicroCupCar and other miniature motorized vehicles can be found through www.scootersports.com, or by writing Scooter Sports, P.O. Box 45020 Phoenix, AZ 85064-5020.

(Rear Crankshaft Seals Continued)

Fig. 2 - Elastomeric, Point Contact Design



Material	Min Temperature (°F/°C)	Maximum Temperature (°F/°C)
Nitrile Rubber	-40 / -40	225 / 107
Polyacrylate Rubber	-20 / -29	300 / 149
Silicone	-80 / -62	350 / 177
Fluoroelastomer Rubber	-40 / -40	400 / 204
PTFE	-110 / -79	500 / 260

PTFE has 1/10th the coefficient of friction than that of most elastomeric rubber seals. It therefore has far superior dry running capability, and will not leak due to conditions such as stick-slip.

There are many reasons why PTFE seals will outperform traditional spring loaded elastomeric seals in crankshaft seal applications. When selecting a PTFE seal rather than an elastomeric seal for a crankshaft application, the user should expect: A seal that can handle periods of time when it is starved for oil without burning up, a seal that can handle both extreme high and low operating temperatures, a seal that will not be effected by which type of oil the operator chooses to use, a seal that can handle more assembly misalignment without leaking, and a seal with superior pumping ability and the ability to overcome minor surface imperfections on the damper or on the rear crankshaft flange.



Military Office has the JASPER Touch!



United States Air Force Major General Donald Wetekam, Commander of the Warner Robins Air Logistics Center, recently moved into his new office. Wetekam and his wife, Sheri, are avid NASCAR fans. The General brought with him a trunk lid from the NASCAR #77 Ford Taurus of Jasper Motorsports to display in his office. Jasper Motorsports gave Wetekam the trunk lid in recognition of his most recent promotion.



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